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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,028	05/30/2001	Adoram Erell	P-3297-US	5636
20985	7590	08/02/2004	EXAMINER	
FISH & RICHARDSON, PC 12390 EL CAMINO REAL SAN DIEGO, CA 92130-2081			LEWIS, MICHAEL A	
			ART UNIT	PAPER NUMBER
			2655	10

DATE MAILED: 08/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/867,028

Applicant(s)

ERELL, ADORAM

Examiner

Michael A Lewis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 - 20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 - 20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>09</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Drawings

1. New corrected drawings are required in this application because the current drawings contain handwritten text that is not legible. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 -20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The specification discussion on p.6 Lines 11 -12 is confusing since it seems to be mixing algebraic and dB values of the factors in question in the equation for determining

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DRC gain value. Also, delta L is not clearly defined. The claims require this equation for disclosure of how to make and use the invention.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 7 and 17 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "delta L" and "L" are not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. What exactly is "L" and "delta L"?

Claim Objections

5. Claims 1 & 11 are objected to because claim methods as written seem to consist of a single step. Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1,2,3,11,12 & 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Heitkamper (Translated version of EP0600164).

Regarding claims 1 & 11, Heitkamper discloses a method/computer system comprising enhancing intelligibility of speech within a received speech signal by adjusting the amplitude of samples within a frame of the signal by an automatic gain factor derived a long term peak value (Fig. 1, Page 1). *[Based on the translators note, Heitkamper describes adjusting the signal level of a received signal by adaptively feedback derived from a nominal value (obtained over time). This process is equivalent to automatic gain control described by the applicant].*

Regarding claims 2 & 12, Heitkamper discloses the automatic gain factor is correlated to a noise factor (Fig 1, Page 5, Paragraph 2).

Regarding claims 3 & 13, Heitkamper discloses an automatic gain factor is related to the difference between a constant level value and the long term peak value (Page 5, Paragraph 2) *[The control signal level (gain control signal) is determined by the difference of the received signal and a threshold value].*

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. Claim 4,5,6, 8-10,14,15,16 & 18 - 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over unpatentable over Heitkamper (Translated version of EP0600164) in view of Shashoua (US6535846).

Regarding claims 4 & 14, Heitkamper discloses a method/computer system comprising enhancing intelligibility of speech within a received speech signal by adjusting the amplitude of samples within a frame of the signal by an automatic gain factor derived a long term peak value (Fig. 1, Page 1). Heitkamper do not

disclose adjusting the amplitude of the samples within a frame of the signal by a dynamic range compression gain factor. However, Shashoua teaches adjusting the amplitude of the samples within a frame of the signal by a dynamic range compression gain factor (Abstract). Dynamic Range compression is just one technique used to prevent excessive amplification of background noise and to enhance the intelligibility of speech.

Therefore, it would have been obvious to one of ordinary skill at the time of the invention to modify Heitkamper with the use of Dynamic Range Compression as taught by Shashoua since it would have prevented excessive amplification of background noise and enhanced the intelligibility of speech.

Regarding claims 5 & 15, Heitkamper discloses the dynamic compression gain factor is correlated to a noise factor (Heitkamper, Fig 1, Page 5, Paragraph 2).

Regarding claims 6 & 16, the combination of Heitkamper and Shashoua disclose dynamic compression gain factor is related to the difference between a long term peak value and an instantaneous peak value (Shahoua: Col 6, Lines 1 – Lines 22).

Regarding claims 7 & 17, the combination of Heitkamper and Shashoua disclose the dynamic compression ("DRC") gain factor is adjusted in proportion to a maximum DRC gain value divided by a delta L value (Shashoua: Col 5, Lines 5 – 20). *[It is well known in the art at the time of the invention that to adjust the gain according to the instantaneous peak-to-peak values one necessarily needs to keep comparing the maximum DRC gain with the range (delta L as interpreted by the office)].*

Regarding claims 8 & 18, the combination of Heitkamper and Shashoua disclose adjusting the amplitude of samples within a second consecutive frame using a target gain factor, wherein a target gain factor is defined as the sum of a frame's automatic gain factor and DRC gain factor (Col 5, Lines 40 – 63). *[It is well known in the art at the time of the invention that since DRC gain needs to be adjusted over frames to meet the target value that the applicant's gain will become a sum when expressed in dB values].*

Regarding claims 9 & 19, the combination of Heitkamper and Shashoua disclose a smoothing the target gain factor (Shashoua: Fig 1 (16-1)).

Regarding claims 10 & 20, the combination of Heitkamper and Shashoua disclose a second target gain factor smoothing to prevent excessive amplification of background noise (Shashoua: Col 5, Line 40 – 55) *[It is well known in the art at*

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the time of the invention that smoothing constitutes an averaging over a minimum of two frames].

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Hemkumar et al (U.S. Patent 6212273)

Domer et al. (U.S. Patent 6754337)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Lewis whose telephone number is 703 305-8730. The examiner can normally be reached on Monday through Friday, 8:30 am – 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, To Doris can be reached on (703) 305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

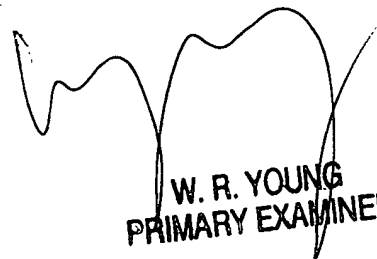
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Lewis A Michael
Examiner
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W. R. YOUNG
PRIMARY EXAMINER